

Message Text

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ACTION EUR-12

INFO OCT-01 ISO-00 EURE-00 SSO-00 NSCE-00 USIE-00
INRE-00 INT-05 COME-00 FDRE-00 PA-01 PRS-01 PM-04
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O 211745Z MAR 77
FM AMEMBASSY BUCHAREST
TO SECSTATE WASHDC IMMEDIATE 2314

LIMITED OFFICIAL USE SECTION 1 OF 2 BUCHAREST 2078

FOREIGN DISASTER RELIEF (OFDA)

DEPT PASS NBS AND USGS

E.O. 11652: N/A
TAGS: SWEL, EAID, RO
SUBJECT: EARTHQUAKE: SEISMOLOGICAL MONITORING EQUIPMENT

1. NBS/USGS/BURREC/CORPS OF ENGINEERS TEAM HAS GIVEN
EMBASSY TWO THIRDS OF THREE PART PROPOSAL ON INSTRUMENTATION/
RESEARCH/TECHNICAL ASSISTANCE PACKAGE FOR CONSIDERATION
BY DEPARTMENT AND AID. PROPOSAL SO FAR COVERS STRUCTURAL
(EARTHQUAKE) ENGINEERING AND SEISMIC PGLFAMSJT BUREAU OF
RECLAMATION/CORPS OF ENGINEERS EXPERTS WILL SUBMIT THEIR
OBSERVATIONS FOLLOWING LAST OF DAM SITE INSPECTIONS AT
END OF THIS WEEK.

2. EMBASSY CONCURS IN QDG ZEU'S SUGGESTION THAT AID
WORK THROUGH ITS OFFICE OF SCIENCE AND TECHNOLOGY AND
OFFICE OF FOREIGN DISASTER ASSISTANCE TO COORDINATE
SUBMISSIONS OF EXPANDED DETAILED PROPOSALS, AND SUPER-
VISION OF SUBSEQUENT EFFORTS. PARTICIPATION OF THE US
TEAM MEMBERS AND THEIR AGENCIES IS PLAINLY REQUIRED
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BASED ON THEIR FAMILIARITY WITH IN-COUNTRY SITUATION.
FOR SAME REASON EMBASSY RECOMMENDS
FOCAL POINT ALSO BE IDENTIFIED WITHIN PRESENT TEAM
TO COORDINATE INPUT FROM FOUR FEDERAL AGENCIES INVOLVED.
PRELIMINARY PROPOSAL GIVEN BELOW:

3. STRUCTURAL ENGINEERING. TEAM SUGGESTS IMMEDIATE US

TECHNICAL ASSISTANCE BE CONSIDERED IN EVALUATION AND REPAIR OF DAMAGED STRUCTURES. US ASSISTANCE COULD ALSO BE PROVIDED TO IMPROVE ROMANIAN CAPABILITIES FOR EARTHQUAKE-RESISTANT DESIGN AND CONSTRUCTION. THIS PROGRAM WOULD SERVE THE DUAL OBJECTIVES OF PROVIDING URGENTLY NEEDED HUMANITARIAN ASSISTANCE AND AFFORDING VEHICLE FOR MUTUALLY BENEFICIAL EXCHANGE OF SCIENTIFIC INFORMATION.

4. MECHANISMS FOR ASSISTANCE

MECHANISMS REQUIRED TO CARRY OUT THE PROGRAM INCLUDE:

(1) EXCHANGE OF DESIGN PROFESSIONALS AND CONSTRUCTION SPECIALISTS, (2) INSTALLATION OF SCIENTIFIC INSTRUMENTATION,

(3) EXCHANGE OF SCIENTIFIC INFORMATION, (4) EXCHANGE OF SCIENTIFIC PERSONNEL.

5. EXTENT OF PROGRAM

TWO AND ONE-HALF YEAR PROGRAM INVOLVING AN EXPENDITURE OF \$1,000,000 IS ENVISIONED. WORK RELATED TO EVALUATION AND REPAIR OF DAMAGED BUILDINGS SHOULD BEGIN AS SOON AS POSSIBLE. APPROXIMATELY 6 MONTHS AND HALF OF ESTIMATED FUNDS WOULD BE REQUIRED FOR FIRST PHASE. LONGER-TERM ASSISTANCE WOULD EXTEND OVER A TWO-YEAR PERIOD AND REQUIRE OTHER HALF OF FUNDS.

6. IMMEDIATE ASSISTANCE IS SUGGESTED THROUGH A FORMAL INSTRUCTIONAL PROGRAM FOR ROMANIAN PROFESSIONALS. THIS WOULD BE CARRIED OUT IN THE US AND/OR ROMANIA. ITS SCOPE SHOULD COMPRISE METHODS FOR EVALUATING EXTENT OF EARTH-LIMITED OFFICIAL USE

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QUAKE DAMAGE, AND INSTRUCTIONS IN USE OF MATERIALS AND SCHEMES FOR REHABILITATION OF DAMAGED STRUCTURES.

7. IMPROVEMENT OF CAPABILITIES FOR DESIGNING EARTHQUAKE RESISTANT STRUCTURES CAN ALSO BE EFFECTED THROUGH DESIGN AND ESTABLISHMENT OF BROAD NETWORK OF STRONG-MOTION ACCELEROGRAPHS LOCATED ON GROUND, IN SELECTED TYPICAL BUILDINGS, AND ON DAMS, TO MONITOR FUTURE EARTHQUAKES.

ASSISTANCE SHOULD BE PROVIDED ESPECIALLY TO TRAIN ROMANIANS IN CONTINUOUS MAINTENANCE OF THIS NETWORK. U.S. SHOULD ALSO SUPPLY GUIDANCE IN IMPROVING EXISTING ROMANIAN SEISMIC DESIGN PROVISIONS, PROVIDE LABORATORY EQUIPMENT AS APPROPRIATE FOR RESEARCH IN GEO-TECHNICAL ENGINEERING AND DYNAMICS OF STRUCTURES, AND ESTABLISH MECHANISM WHEREBY CONTINUOUS EXCHANGE OF NEW RESEARCH INFORMATION AND SCIENTIFIC PERSONNEL CAN BE EFFECTED.

8. AT THIS STAGE, US TEAM SUGGESTS FOLLOWING SPECIFIC

INSTRUMENTATION, SITE LOCATIONS, AND ESTIMATED COSTS
(APPROX. \$400,000) FOR STRONG-MOTION NETWORK RE PARA 7.

SITES	NO. OF ACCZOGRAPHS	ITEM COSTS	TOTAL
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BUCHAREST

FREE-FIELD	5 (3 EACH)	2,000	10,000
STRUCTURE	6 (15 EACH)	15,000	90,000
DOWNHOLE	1 (12 EACH)	27,000	27,000

OTHER MAJOR CITIES:

FREE-FIELD	5 (3 EACH)	2,000	10,000
STRUCTURES	5 (15 EACH)	15,000	75,000

DAMS

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FREE-FIELD	4 (3 EACH)	2,000	8,000
ON STRUCTURE	4 (18 EACH)	18,000	72,000

MISC. RURAL SITES

FREE-FIELD	5 (3 EACH)	2,000	10,000
SUB-TOTAL		302,000	

SPARE PARTS	30,000		
FREIGHT (5 PERCENT, TOTAL)	15,000		
SALARY (US TECHNICAL ASSISTANKP)	25,000		
TRAVEL/PER DIEMN NJ	25,000		
TOTATE	397,000		

NOTE UNDER BUCHAREST DOWNHOLE--

--OPTIONAL (NEEDS FURTHER STUDY)

9. PROPOSED ASSISTANCE TO ROMANIAN SEISMIC PROGRAMS
(PART II OF 3-PART PROPOSAL, PARAS 9-14 BELOW). THERE
IS A CATEGORY OF PROBLEMS ASSOCIATED WITH THE EARTHQUAKE
RISK IN ROMANIA THAT WILL NEVER BE SOLVED WITHOUT IMPROVING
THE COUNTRY'S BASIC IVSSTRUMENTAL NETWTYM. FOR EXAMPLE,
THE RADIATION PATTERN OF WAVES WAS VERY DIFFERENT IN
THE 1940 AND 1977 EARTHQUAKES. THIS IS PROBABLY RELATED,
AT LEAST IN PART, TO THE DIRECTION OF FAULTING IN THESE TWO
SHOCKS. UNTIL THE FAULTS SURFACE(S) ARE ACCURATELY
DEFINED AND THE MECHANISM OF FAULTING ANALYZED FROM
INSTRUMENTAL DATA, VERY LITTLE PROGRESS CAN BE MADE IN
ESTIMATING T Z POSSIBLE REGIONAL PATTERNS OF FUTURE
GROUND MOTION.

10. ROMANIA'S NETWORKS OF SEISMOGRAPH STATIONS CONSIST OF, FOR THE MOST PART, OBSOLETE EQUIPMENT. SINCE THE EARTHQUAKE, THE CENTER FOR EARTH PHYSICS AND SEISMOLOGY (DIRECTOR: DR. ION CORNEA) HAS BEEN GIVEN A TEXEX SO THAT THEY CAN NOW SEND SEISMOLOGICAL DATA TO WORLD SEISMOLOGICAL LIMITED OFFICIAL USE

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CENTERS IN A TIMELY MANNER. CORNEA IS INTERESTED IN OBTAINING INSTRUMENTATION FOR ONE OR TWO "STANDARD" SEISMOLOGICAL STATIONS SIMILAR TO ONES OPERATED COOPERATIVELY BY VARIOUS COUNTRIES WITH USGS AROUND THE WORLD. THIS WOULD MEAN THAT, FOR THE FIRST TIME, HIGH QUALITY SEISMOLOGICAL DATA FROM ROMANIA WOULD BE AVAILABLE FOR RESEARCH AND EARTHQUAKE

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INFO OCT-01 ISO-00 EURE-00 SSO-00 NSCE-00 USIE-00
INRE-00 FDRE-00 PA-01 PRS-01 PM-04 NSC-05 CIAE-00
DODE-00 INR-07 NSAE-00 SP-02 AID-05 EB-08 SCA-01
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LOCATION ON A TIMELY BASIS. IN ADDITION, THERE IS A NEED FOR A SMALL NUMBYH OFHPORTABLE SEISMOGRAPHS FOR LOCAL STUDIES AND FOR SEISMOMETERS (THE TRANSDUCER PART OF THE SYSTEM) TO STANDARDIZE THE INSTRUMENTATION IN THE ROMANIAN NETWORK.

11. CONSEQUENTLY, A 12-MONTH PROGRAM OF SEISMIC INSTRUMENT-
ATION AND ASSISTANCE IN MICROZONATION IS RECOMMENDED.
(FOR CONSIDERATION). THE LEAD AGENCY FOR THE PROGRAM AS
OUTLINED SHOULD BE THE USGS, SINCE IT OPERATES THE US

SEISMIC SERVICE, HAS SUPPLIED ALL THE SEISMIC ZONING MAPS USED IN BUILDING CODES IN THE US, TOGETHER WITH A NUMBER OF MICROZONING MAPS USED BY COUNTRIES AND MUNICIPALITIES. ESTIMATED COSTS FOR THE PROGRAM INCLUDE \$200,000 FOR IMPROVED INSTRUMENTATION, AND \$155,000 FOR THE ZONING AND MICROZONING EFFORT, AS FOLLOWS:

12. INSTRUMENTATION:

--INSTRUMENTATION FOR TWO "STANDARD" SEISMOLOGICAL STATIONS, INCLUDING 3 SHORT-PERIOD AND 3 LONG-PERIOD SEISMOMETERS, LIMITED OFFICIAL USE

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CRYSTAL CLOCK, RADIO, RECORDING DRUMS, ETC.
AT \$50,000 STATION \$100,000

--20 SHORT PERIOD SEISMOMETERS, 10
VERTICAL, 10 HORIZONTAL AT 1,000/
INSTRUMENT 20,000

--3 SETS PORTABLE EQUIPMENT AT \$6,000 18,000

--US PERSONNEL TO AID IN STATION INSTALL-
ATION AND VISIT OF ROMANIAN TECHNICIAN
TO US 12,000

--US SCIENTIFIC VISITS TO ROMANIAN
FOUR AT ONE MONTH EACH, SALARY INCLUDED 30,000

--SPARE PARTS 20,000

13. ZONING AND MICROZONING

THERE IS WIDESPREAD REALIZATION AND UNDERSTANDING AMONG ROMANIAN EARTHQUAKE ENGINEERS AND SEISMOLOGISTS THAT THE SEISMIC ZONING OF THE COUNTRY AS A WHOLE (ON A REGIONAL BASIS) AND THE MICROZONING OF THE CITIES (LOCAL BASIS) NEED TO BE IMPROVED. THE ROMANIANS HAVE USED OBSOLETE TECHNIQUES IN DEVELOPING THEIR EXISTING ZONING AND MICROZONING MAPS. USG TEAM BELIEVES THAT THIS IS ONE OF THE MOST IMPORTANT PRACTICAL, SCIENTIFIC AREAS IN WHICH THE US COULD UNDERTAKE COOPERATIVE STUDIES. THE COST IS RELATIVELY SMALL AND THE THE RETURN TO BOTH COUNTRIES IN TERMS OF USEABLE INFORMATION COULD BE LARGE.

14. ESTIMATED COSTS:

--STUDY GRANTS TO ROMANIANS FOR VISITS TO THE
US TO LEARN NEW TECHNIQUES (3 PEOPLE FOR 6 MONTHS
OR MORE PEOPLE FOR LESSER PERIODS OF TIME, NO

SALARY INCLUDED) \$45,000
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--VISITS OF US EXPERTS TO ROMANIA. FOUR
VISITS OF ONE MONTH EACH (INCLUDES
SALARY) \$30,000
--COMPUTER TIME IN US 30,000
IMPROVED EQUIPMENT FOR DETERMINATION
OF NEAR SURFACE P AND S WAVE VELOCITIES
(IMPORTANT IN MICROZONING) 50,000
11 RELATED TO ZONING, MICROZONING, AND BUILDING DESIGN
PERAMETERS, ARE TESTING EQUIPMENT FOR MEASURING P AND S
WAVE VELOCITIES IN THE GEOTECHNICAL LABORATORY, TRAINING
OF ROMANIAN SPECIALISTS TO OPERATE AND MAINTAIN THIS
EQUIPMENT, AND EXCHANGE OF GEOTECHNICAL PERSONNEL 50,000

15. COMMENT: ABOVE PRELIMINARY PROPOSAL HAS BEEN ASSEMBLED
BY EMBASSY FROM TEAM'S INDIVIDUAL REPORTS FOLLOWING CONSULTATION
AT DIFFERENT STAGES. PROPOSAL CANNOT STRICTLY BE SAID TO
REFLECT FINAL CONSENSUS OF USG TEAM BECAUSE, FOR EXAMPLE,
TIME AND EVENTS DID NOT PERMIT TEAM TO CONSULT WITH ANY
CENTRAL ROMANIAN SPOKESMAN OR AUTHORITIES OUTSIDE PROFESSIONAL
COLLEAGUES, AND IN SOME CASES, BECAUSE OF SEPARATE SCHEDULES,
DID NOT PERMIT DESIRED AMOUNT OF CONSULTATION AMONG THEMSELVES.
EMBASSY HAS ALSO TAKEN EDITORIAL LIBERTIES IN TEXT FOR PURPOSES
OF CABLE REPORT.

16. COMMENT: EMBASSY ESPECIALLY PLEASED WITH SUCH
PROMINENT GROUP OF EXPERTS BROUGHT TOGETHER BY AID ON
SUCH SHORT NOTICE, AND THEIR EXCELLENT PERFORMANCE WITH
ROMANIAN COUNTERPARTS. TEAM HAS RENDERED INVALUABLE
SERVICE TO US GOVERNMENT BY ITS TIMELY PRESENCE AND
PROFESSIONALISM.
BARNES

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Message Attributes

Automatic Decaptioning: X
Capture Date: 01-Jan-1994 12:00:00 am
Channel Indicators: n/a
Current Classification: UNCLASSIFIED
Concepts: MONITORING, EQUIPMENT, FOREIGN ASSISTANCE, NATURAL DISASTERS, EARTHQUAKES
Control Number: n/a
Copy: SINGLE
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Decaption Note:
Disposition Action: RELEASED
Disposition Approved on Date:
Disposition Case Number: n/a
Disposition Comment: 25 YEAR REVIEW
Disposition Date: 22 May 2009
Disposition Event:
Disposition History: n/a
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Review Release Date: n/a
Review Release Event: n/a
Review Transfer Date:
Review Withdrawn Fields: n/a
SAS ID: 3052724
Secure: OPEN
Status: NATIVE
Subject: EARTHQUAKE: SEISMOLOGICAL MONITORING EQUIPMENT
TAGS: SWEL, EAID, RO, US
To: STATE
Type: TE
vdkgvwkey: odhc://SAS/SAS.dbo.SAS_Docs/66835cb5-c288-dd11-92da-001cc4696bcc
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